CALIFORNIA SCHOOLS

APRIL, 1939

CALIFORNIA SCHOOLS

Volume X **April, 1939** **Number 4**

Official Publication Issued Monthly by the California State Department of Education

WALTER F. DEXTER, Superintendent of Public Instruction
Editor: IVAN R. WATERMAN, Chief, Division of Textbooks and Publications

Entered as second-class matter May 8, 1930, at the Post Office at Sacramento, California, under the Act of August 24, 1912

CONTENTS

Mathematics in California High Schools 83
Interpretation of School Law 89
For Your Information 90
Professional Literature 99
Directory of the Department of Education 101

COVER

Santa Barbara Junior High School makes a special effort to maintain well-organized and beautifully presented hall window display cases. Students plan and execute the display of the products of their handicraft and activities.

The picture on the cover depicts students dressing a window display case with products of the industrial education class. In this case emphasis is being laid upon a group of articles of Mexican art work which has proved an excellent approach to learning for these students. Their arithmetic, science, and social living have been woven into an enjoyable activity course. The work was done by a general shop class.

printed in CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO: GEORGE H. MOORE, STATE PRINTER

69882

Mathematics in California High Schools

FRANK B. LINDSAY, *Assistant Chief, Division of Secondary Education*

Replies from 324 public high school principals establish that more than half of these institutions have moved algebra from the ninth to the tenth grade. Plane geometry is an eleventh-year subject in more than a third of these schools; in some it is even postponed to the twelfth year. By review and remedial procedures 54 per cent of the schools attempt to secure mastery of fundamental arithmetic processes. Many programs of modified mathematics are already in operation in California public high schools. Principals and teachers of mathematics have joined efforts to reduce failures in algebra and geometry. Shifting algebra and geometry to the upper secondary grades signified general acceptance of the statement that "It should be recognized by teachers and counselors that plane geometry is often attempted by pupils before they are mature enough to appreciate the logical development of the subject."[1]

Three years ago at Claremont Junior-Senior High School Superintendent Earl Thompson began to offer algebra, plane geometry, and advanced algebra in the tenth, eleventh, and twelfth years respectively.

William W. Booth, mathematics instructor, discusses the details of the plan:

> Ninth-grade mathematics was required for graduation from junior high school; and, under the old system, at the beginning of the ninth-year pupils were required to choose between elementary algebra and "general mathematics." Since algebra was college preparatory and general mathematics was not, the latter was classified by the pupils as a "dumbbell course," and social pressure caused a number of students to elect algebra who were not suited nor ready for a really preparatory course. This meant either a large group of failures or a lowering of standards.
>
> The new course required uniformly of all eliminates this differentiation. Approximately the first semester is given to review and remedial work in arithmetic situations to build up arithmetic background both for those who later take algebra and for those for whom this is a terminal mathematics course. The work chosen has a large enough range of difficulty to enable each student to see for himself whether or not he is sufficiently prepared and interested to take further mathematics. The second semester is devoted to what is generally classified as "consumer" mathematics, with special attention to local problems. Deferring college preparatory mathematics one year brings a great deal of added maturity in each later course with increase in interest and comprehension. Since

[1] Merton E. Hill, "The Case of Plane Geometry," *California Journal of Secondary Education*, X (January, 1935), 107.

> algebra has become purely elective, standards have been raised materially and students now are sufficiently mature to reach these standards and appreciate their value. The arithmetic review has been especially valuable.

Several California secondary schools have long anticipated the transformation of high school geometry into a study of "the nature of proof" and "of generalizing this experience so that effective transfer will result."[1]

Principal Robert R. Hartzell of Red Bluff High School writes:

> Clear thinking is the major objective in our geometry classes. Mathematical terms are not mentioned during the first three weeks of the course. Rather, an attempt is made to develop an ability to think critically, logically, and clearly. Exercises are taken from everyday experiences; students are asked to listen to and criticise statements made over the radio, in newspapers, and in magazines. Geometric concepts are introduced after this unit has been thoroughly developed.

Similarly Principal W. Fred Ellis at Stockton High School, and J. S. Reed, head of the mathematics department, report:

> We hope through the vehicle of geometry to teach independent thinking, to reach the best approach and analysis of new situations in a logical rather than haphazard manner, to emphasize the difference between experimental, inductive thinking and logical deductive proof, to help pupils to realize the importance of assumptions and definitions, and to relate each of these separate goals to everyday thinking by means of consciously teaching for transfer. Meanwhile, other recognized objectives of geometry have not been neglected. The facts of geometry are still acquired and the body of theorems meets college entrance requirements. We wish to teach geometry without losing the essentials of the subject-matter but in doing so to relate it more closely to life, to give more appeal and reality to the student and to have more value for the average ones who do not intend to use the subject professionally.
>
> Now what are the results? At present it seems that this work is best adapted to the higher IQ levels. In the lower mental brackets there are many who are unable to grasp some of the material. This seems to be so because they are obliged to reason logically rather than learn proofs presented to them and closely to follow type work. Whether they get more out of it in the end by struggling with real thinking rather than mere memorization is a question to be argued.

The true importance of these endeavors becomes apparent in the light of an observation by Dr. Eric Bell at the California Institute of Technology:

> A diluted form of Euclid, looser than his loosest, is one of the mainstays of American education today. It is supposed to quicken the reason, and there is no doubt it does in the hands of a thoroughly competent and modernized teacher, who lets the children use their heads and see for themselves exactly how nonsensical some of the stuff presented as "proof" really is. . . . If school children fail to get some conception of

---

[1] Harold P. Fawcett, *The Nature of Proof*, Thirteenth Yearbook of the National Council of Teachers of Mathematics, Teachers' College, Columbia University, 1938. p. 15.

> geometry and close reasoning out of their course in "geometry," they get nothing except possibly a permanent inability to think straight and a propensity to jump to conclusions which nothing in reason and sanity warrants.[1]

At Tule Lake High School, of the Siskiyou Union High School District, Instructor Sidney E. Lang states that

> Emphasis on subject-matter in geometry is relaxed, and more emphasis is placed on proper study habits. Students are encouraged to help each other with daily assignments. We maintain that the habits learned in the course are more important than theorems.

At Pomona Principal Johnston E. Walker is effecting a reorganization of the public secondary schools into a four-year high school and four-year junior college. Algebra, enriched by intuitive geometry and the trigonometry of the right triangle, is offered in the tenth year. In junior college advanced algebra and trigonometry follow in grade eleven. Throughout the twelfth year plane and solid geometry are studied simultaneously.

Homer G. Cain, head of the mathematics department, discussed the plan as follows:

> We feel that this arrangement, inaugurated in 1936-37, will make for economy of time with no loss of subject-matter covered. The second year of algebra immediately follows the first as compared to the former lapse of one year for plane geometry. Algebra and trigonometry are taught in the eleventh year and combined directly in the study of many topics such as simplification of fractions, solution of equations, study and use of identities and substitutions. Plane and solid geometry are taught together in the twelfth grade without the former lapse of one year for advanced algebra. Plane geometry facts and trigonometry of the right triangle have been related to tenth-year algebra wherever they can be profitably used to demonstrate and apply algebraic processes. The students are one year older when they start this new program and have added ability to handle it. The study of geometry is retarded two years which gives the student added maturity to handle both plane and solid geometry in one year.

Instead of attempting radical modifications of content in algebra and geometry or rearrangement of subjects by years, some high schools solve their problem by motivation of individual students. An example of this approach is the course taught at Big Pine High School. Principal Herbert D. Gwinn has stated the procedure as follows:

> Some years ago I began to question the value of geometry when taken only to fulfill a college entrance requirement. Many students do not have any particular aptitude for a rigid course in geometry. To meet this situation, I ceased to follow religiously the usual high-school geometry textbook. I minimized the constant assignment of a whole list of problems after a study of each theorem or corollary. Whenever possi-

---

[1] Eric Bell, *The Search for Truth*. Baltimore: Williams and Wilkins, 1934, pp. 117-119.

ble, I tried to find some practical application of each theorem or construction. We did a great deal of geometric designing and pattern-making. I found that students learned construction with a purpose. Of course, one must realize that our classes are small, and a particularly brilliant mathematics student seldom confronts us. Naturally, if a student were a mathematics major, he would be required to do more of the conventional geometry work. From personal experience I found that I could secure good grades in this subject, but found little practical use for it until I began on construction jobs while earning college expenses. This experience was the nucleus for the above idea.

Again, at El Monte Union High School, Superintendent Robert S. Hicks quotes the mathematics instructor:

In algebra and geometry I use the vocational interests of each pupil to motivate these studies. Each pupil states his vocational ambitions and hobbies and is directed to specially prepared vocational guidance material in the library. He determines the requirements of his vocation and sees in what ways mathematics will help him to be successful in that vocation. His findings are reported to the class.

An effort is made at the beginning of algebra and geometry courses to eliminate probable failures. A test is given at the beginning of the course to predict probable success. Frequent diagnostic tests are given to determine factors contributing to unsuccessful work. The results are charted for each pupil and followed with individual and small group discussion and remedial lessons assigned.

Whatever will be the ultimate place in secondary schools of mathematical subjects, the scrutiny of course-content and questioning of methods is educational to teachers and administrators. Sometimes it is found that no drastic measures are necessary to solve the difficulties pupils formerly have experienced. Simple devices suffice to revolutionize class results. Principal Dale I. Glick discusses the plan followed at Corona High School:

There has been no very great change in the content of the ninth- and tenth-grade mathematics courses. Methods of teaching, however, have been varied from the traditional type by allowing each student to progress at his own rate of speed. This tends to individualize instruction in these classes. So far results have been gratifying. Both pupils and teachers like it. In smaller high schools the method can be applied over a wider field.

At Atascadero Principal Roy D. Gilstrap explains that:

Most of our college-preparatory students do not continue mathematics beyond geometry, but for those who do we have a special, advanced class. The work that these people do depends upon their interest and ability. Some take solid geometry, some trigonometry, some higher algebra; there is no attempt to conduct group recitations, but each student is helped to learn just as much as he is able. This advanced work involves only those few students who have ambition to continue in engineering work at a university. We require all students to attain a mastery of fundamentals in arithmetic. Our teachers endeavor to make mathematics as functional as possible and are encouraged to tie up the work, whenever they can do so, with experiences in the student's daily

> life. I do not believe, personally, that the technical part of mathematics can be highly "socialized." Neither do I believe that we should deprive a student of greater mathematical experience if he desires to have it.

Instructor H. S. Tilton at El Segundo High School points out that:

> The fundamental content of algebra is the same today as it always has been. However, the method of teaching has been modernized along with the wording of problems. Instead of being made up only to be solved, problems relate to and have meaning in the lives of pupils. Almost all occupations require calculations. The algebra textbook of yesterday left most explanations to the teacher, aside from simple problems. In modern algebra books a student may read explanations step by step. The task of the teacher, then, becomes furnishing enthusiasm and directing the reading of the student.

Remedial mathematics affords opportunity to consider how problems are solved, in the opinion of Principal C. W. Lockwood at San Jacinto High School:

> We learn to decide what facts we need to know to answer the questions raised; we learn to decide upon a succession of steps that will lead to the desired result; we come to understand that particular problems are instances in a larger process, and that new problems in the main consist in arranging series of steps.

San Mateo High School offers four types of ninth-year mathematics work; according to Principal F. J. McConville:

> Students fall more or less into different groups, for which varied work is advisable: vocational mathematics for boys in vocational training; commercial arithmetic for prospective commerce students; algebra for college-preparatory pupils; and practical mathematics for those whose principal need is further training in fundamental processes.

At Fowler Union High School Principal Erwin A. Dann reports a combined general science and mathematics course under the direction of Miss Marian Feaver and Miles McColm. Since home is the general theme of ninth-grade instruction, usually a dwelling under construction in the vicinity of the school is studied. Materials and methods of construction compose a unit that introduces study of concrete for foundations, brick, stone, and lumber. On the mathematical side arise problems in volume and area of excavations, walls and flooring, and mill work; scale drawings of house and premises and estimates of board feet and other quantities are made. Following units are devoted to heating and ventilation, insulation, and air-conditioning. The physics of air and water, types of radiation, and fuels come in here. Thermometer scales and comparative costs involve mathematical calculations. Lighting and furnishing raise consideration of transformation of energy and properties of textiles. Reading meters and computing service bills give arithmetic practice. The general problems of

home-financing, installment buying, and consumer education come in. Family budgets, bank accounts, insurance, and taxes receive consideration under meaningful circumstances. It may be that instruction at Fowler anticipates a probable tendency toward widespread application of mathematics to natural situations, as an aid to learning in other fields—just as reading and language arts are basic to success in every subject in the secondary school.

INTERPRETATIONS OF SCHOOL LAW

ALFRED E. LENTZ, Administrative Adviser

ATTORNEY GENERAL'S OPINIONS

Classification of Administrative Officer of School District as Permanent Employee

School Code section 5.502, as amended in 1935, is not retroactive in effect, and an administrative officer of a school district who has served as such for ten years and who has performed no teaching services during that time will not become a permanent employee of the district under School Code section 5.500 unless he is re-employed for the school year 1939-1940, either as teacher or as an administrative officer (citing A.G.O. No. NS506). (A.G.O. NS1482, February 28, 1939.)

Duty to Provide for Education of Children

Where a contractor contracting with the United States government to perform certain services agrees with the United States government to make "all necessary arrangements with the proper state and county authorities for school facilities and instruction, up to and including the twelfth grade, for the families of the contractor's employees living in his construction camp and in the vicinity of his construction camp, and for the families of government employees," such agreement does not relieve a school district in which the children concerned live of its obligation imposed by School Code sections 1.130 and following to provide school facilities for the children of the district, and the school district probably has no cause of action against the contractor for any alleged breach of the agreement quoted, although it may be held that the children or their parents would be third party beneficiaries under the agreement so as to enable them to maintain an action against the contractor. (A.G.O. NS1447, February 17, 1939)

Power of School District to Purchase Insurance for Privately Owned Automobile

The governing board of a school district has no authority to pay premiums on policies of insurance on the private automobile of the superintendent of schools of such district covering fire, theft, collision, property damage and liability, except such insurance as covers the risks for which the district itself may be liable. (A.G.O. NS1451, February 14, 1939)

FOR YOUR INFORMATION

CALENDAR FOR SCHOOL DISTRICT ELECTIONS CONDUCTED ON FRIDAY, JUNE 2, 1939

This calendar applies to elections in all school districts except those having governing boards elected or appointed under the provisions of a city charter prescribing a different election procedure. In such cases the charter controls and must be followed. Except where otherwise specified the elections in union and joint union districts; high school, union high school, and joint union high school districts; junior college districts, and unified districts, shall be called and held and conducted in the same manner as elections in elementary school districts.

APRIL 22 *Registration closes.* Last day to register to be eligible to vote at this election. (School Code section 2.878)

MAY 3 *Notice of election.* On or before this date the governing board of the district must post in three public places and publish once a week for three weeks a notice of election, which notice must specify the time and place of election, the number of trustees to be voted for, the location of the polls, and the hours the polls will be kept open. If there is no newspaper published in the district notice shall be given by posting only. (School Code section 2.873)

The clerk or secretary of the governing board shall request the county clerk to furnish copies, not exceeding four, of the precinct indexes of county election precincts contained in the school district, as of April 23. Upon receipt of such request at least twenty days before said election the county clerk shall furnish such copies. (School Code section 2.878)

If the governing board neglects or refuses to issue notice of election, May 18 is the last day for three electors to post and publish such notice. Publication need be only once a week for two weeks, and is a charge against the district. (School Code section 2.874)

In high school and junior college districts there must be a polling place in each elementary school district composing such high school or junior college district. (School Code sections 2.1058, 2.1141, 2.1142)

Except where the average daily attendance of the district (or of the elementary school district comprising a precinct of a high school or junior college district) is less than 500, polls must be opened and kept open the same hours as at the last general election. If such average daily attendance in such district is less than 500, the polls must not be opened before 9 a.m., nor closed before 5 p.m., and must be kept open for not less than four hours. (School Code section 2.877)

The governing board may subdivide the district into precincts. (School Code section 2.875)

The governing board must appoint one inspector and two judges of election. If none are appointed, or if those appointed are not present at the time for opening the polls, the electors present may appoint such officers, and they shall conduct the election. (School Code section 2.875) The governing board may mail out sample ballots and notices of polling place of voters. (School Code section 2.876½)

MAY 13 to MAY 27[1] *Absent voting.* Between these dates (both dates included), application in writing may be made to the officer or board conducting the election for "absent voter ballot"; upon receipt of same such officer shall deliver to applicant, personally or by registered mail, an official ballot of the precinct of said applicant, together with an identification envelope and a return envelope. Such officer shall then enter the ballot number and date of delivery or mailing upon the application of absent voter. Before the election such officer shall send to the inspector of each precinct a list of voters in his precinct receiving absent voter ballots. (Political Code section 1357) All absent voter ballots must be voted on or before the day of election in the manner required by Political Code section 1359.

MAY 18 *Candidate's declaration of candidacy.* Last day for candidate to file with the county superintendent of schools. (School Code section 2.879)

JUNE 2 *Day of election.* Polls open and close as set by notice of election. Immediately after the close of the polls the pre-

[1] The last day on which the law permits the performance of this act falls on Sunday. It is therefore indicated that it must be done on the last preceding business day.

cinct election officers must publicly count the vote cast for each candidate, fill out the tally list, and certify to the correctness of the tally made. (School Code section 2.888) Election officers, in case of elementary and unified district elections, must make, sign, and deliver certificates of election to the persons elected, who shall forward such certificate, with the oath of office of such person attached, to the county superintendent of schools. (School Code section 2.889)

The election officers in elementary and unified school districts shall then seal the returns and send them to the clerk of the district. Within five days thereafter the clerk shall forward such returns to the county superintendent of schools. (School Code section 2.891)

In union and joint union elementary school and high school districts and in junior college districts the returns shall be forwarded to the clerk of the governing board of such district. (School Code sections 2.1060, 2.1144, 2.915)

JUNE 7 — Last day for clerk of elementary or unified district to forward returns to county superintendent of schools (School Code section 2.891)

JUNE 8 — Last day for the officer or board conducting the election to receive absent voter ballots. (Political Code section 1361)

JUNE 6 to JUNE 9 1 p.m. — Between these dates, both dates included, the governing board of the high school district must meet and canvass the returns, and issue certificates of election to persons elected, and forward duplicates of such certificates to the superintendent of schools having jurisdiction over the district. (School Code section 2.1061)

JUNE 9 1 p.m. — Governing board of union or joint union elementary district must meet and canvass the returns and issue certificates of election to persons elected, and forward duplicates of such certificates to the superintendent of schools having jurisdiction over the district. (School Code section 2.916)

JUNE 9 2 p.m. — Governing board of junior college district must meet and canvass the returns and issue certificates of election to persons elected, and forward duplicates of such certificates to the superintendent of schools having jurisdiction over such district. (School Code section 2.1144)

JUNE 9 As soon as all absent voter ballots issued have been received or returned and accounted for, and in no case later than this date, the officer or board conducting the election shall proceed to count and tally absent voter ballots under the designation of "absentee vote." (Political Code section 1361)

Immediately on conclusion of canvass of absent voter ballots such officer or board shall proceed to add votes thus counted to the result of the official canvass of the precinct vote to obtain complete and total vote. (Political Code section 1362)

FELLOWSHIPS AND SCHOLARSHIPS IN SAFETY EDUCATION

The Center of Safety Education of New York University offers the following fellowships and scholarships in safety education:

1. Sixty tuition scholarships of $22.00 each to be awarded May 1, 1939, for the Curriculum Workshop and Laboratory Intersession to be held June, 1939.

City and state superintendents of schools and heads of colleges or universities are invited to designate one teacher or supervisor who may be awarded a scholarship. Applications will be received after February 25, 1939. These applications must be accompanied by a letter from the superintendent or president. Candidates should file with the Center for Safety Education a statement of their education, experience, special interest in safety, a description of their present position, and the reasons for wishing to enroll at the Center's Safety Workshop. They should also indicate the course or courses which they wish to take. Notifications of appointments will be sent out on May 1.

2. Nine fellowships and nineteen scholarships having a total value of $11,000 will be made available to advanced students in safety education for the academic year 1939-1940 by the New York University Center for Safety Education. The stipends to holders of fellowships range from $400 to $1,200, the amount in each case depending in part upon the qualifications, experience, and needs of the candidate, and his plans for future work in the field. Stipends to holders of scholarships cover tuition for safety courses.

Application blanks may be secured from the Safety Education Fellowship Committee, Center for Safety Education, New York University, 20 Washington Square, North, New York, N. Y. Applications for the 1939-1940 academic year must be received by the Committee not later than May 25, 1939.

SCHOOL EXECUTIVES' CONFERENCE TO BE HELD AT THE UNIVERSITY OF CALIFORNIA SUMMER SESSION, BERKELEY

The Ninth Annual School Executives' Conference, under the auspices of the Summer Session of the University of California at Berkeley, will be held this year, July 10 to July 21. Previous conferences have been full-day sessions, but this year, on account of The Golden Gate International Exposition on Treasure Island, the conference sessions will be held during the mornings only, leaving afternoons and evenings free for those who may wish to see the Exposition and study the educational exhibits of many lands. Persons interested, may secure further information by writing to Professor F. W. Hart, University of California, Berkeley, California.

MAY DAY—CHILD HEALTH DAY

Health as the first objective of education is pointed to by John W. Studebaker, United States Commissioner of Education, in asking that May Day be observed throughout the United States as Child Health Day. This observance has been proclaimed by the President of the United States.

Commissioner Studebaker stresses the fact that while every day is a health day, it is well to take occasion on May Day to make good resolutions and a fresh start in safeguarding the health of the nation's children.

The Washington office of the United States Children's Bureau has submitted the following suggestions for the character of the observance.

Slogan: The health of the child is the power of the nation.

Objective: To bring to the attention of each community— — the importance of the child's health development, and well being throughout life, and of proper food, rest, exercise, medical care, and protection against disease; the ways of informing parents and others how child health may be safeguarded, and the means whereby such safeguards may be made available to all children.

The office of the Children's Bureau has also offered suggestions for emphasis on nutrition as a part of the activities on May Day—Child Health Day for 1939. These suggestions have been assembled under the following topics: What is your community doing for the nutrition of mothers and children? What can be done on Child Health Day to Promote Good Nutrition? What nutrition projects can be carried on during the coming year?

Finally the Children's Bureau urges that each community set a goal—high but attainable—for nutrition achievements in the community by May 1, 1940.

COURSES FOR TEACHERS OF SIGHT-SAVING CLASSES

Several institutions of higher learning in the United States, including the University of California at Los Angeles, are offering summer session courses for the preparation of teachers and supervisors in sight-saving classes. The National Society for the Prevention of Blindness is cooperating with the following colleges and universities in offering these courses:

Western Reserve University, Cleveland, Ohio, June 19 to July 28.
State Teachers College, Buffalo, New York, June 26 to August 4 (dates tentative).
State Teachers College, Milwaukee, Wisconsin, June 26 to August 4.
University of California, Los Angeles, California, June 26 to August 4.
Wayne University, Detroit, Michigan, June 26 to August 4 (elementary and advanced courses).

CHILDHOOD EDUCATION CONVENTION

Preliminary announcements of the program of the forty-sixth annual convention of the Association for Childhood Education, are now ready for distribution to teachers and school administrators in California.

The convention will be held in Atlanta, Georgia, on April 10 to 14. The theme for the program is "Living and Learning in School and Community."

Headquarters for delegates and visitors will be the Atlanta Biltmore hotel. Reservations for the sessions should be made to the office of the Association, 1201 Sixteenth Street, N. W., Washington, D. C.

COLLEGE EXTENSION COURSES TO BE OFFERED ON EDUCATION CRUISE

College extension courses for college, graduate, or teaching credit will be offered on the S. S. Rotterdam, on its fifty-three-day cruise in connection with the Eighth Biennial Congress of the World Federation of Education Associations in Rio de Janiero, August 6 to 11.

The courses will be conducted under the auspices of Clark and Indiana universities. Inquiries regarding these courses, and all inquiries regarding the meetings of the Congress and the itinerary of the Rotterdam, should be addressed to the headquarters of the World Federation of Education Association, 1201 Sixteenth Street, N. W., Washington, D. C.

CALENDAR OF EDUCATIONAL MEETINGS

During 1939 a calendar of educational meetings and conferences will be published from time to time in *California Schools.* In some cases, events may be mentioned before the place of meetings has been

decided, but complete information will be given in subsequent issues. The following schedule of events is chiefly a list of meetings and conferences which take place during the spring term of the 1939 school year, but a few which convene in the early fall have also been included.

Date	*Organization*	*Place*
March 31-April 2	California Association of Women Deans and Vice-Principals	Oakland
March 31-April 1	California Educational Research Association, Northern Section	San Francisco
April 1	Annual Conference of Business Education	San Francisco Hotel Whitcomb
April 2-5	Elementary School Principals and District Superintendents in cooperation with California Elementary School Principals Association and Northern California Council of Exceptional Children	Oakland
April 3, 4, 5	California Secondary School Principals, Annual Convention	San Francisco
April 3, 4	Association of California Classroom Teachers, San Francisco Branch	San Francisco
April 3-6	California Association of Health, Physical Education, and Recreation	San Francisco
April 3-6	California-Western Music Educators Conference	Long Beach
April 6, 7	California Home Economics Association	Fresno
April 6, 7	California Home Economics Executive Council	Visalia
April 7-8	Progressive Education Association Study Conference, Northern California Area	Oakland Westlake Junior High School
April 14	Northern California Association for Exceptional Children	San Francisco
April 15	Association of California Secondary School Principals, Section 21	Julian
April 17	California School Supervisors Association, Southern Section	Los Angeles U.S.C.
April 22	California Home Economics Student Club	Fowler
April 22	Southern California Junior College Association	Compton
April 24	California School Supervisors Association, San Joaquin Valley Section	Merced
April 29	Modern Language Association of Southern California	Los Angeles U.C.L.A.
May 6	California Home Economics Association, Northern Section	Maxwell
May 9	California School Supervisors Association, Bay District	

Date	*Organization*	*Place*
May 14	California Conference of Social Work	Oakland
May 15-20	California Congress of Parents and Teachers, Annual Convention	Santa Barbara
May 26, 27	American Association of University Women	San Francisco
	California Agricultural Teachers Association	San Luis Obispo
June 26-July 1	American Association for the Advancement of Science, Pacific Division	Stanford University
July 2, 6	National Education Association, Seventy-seventh Annual Convention	San Francisco
July 8-21	National Education Association, Department of Elementary School Principals, Annual Conference	Berkeley U. C.
July 10-21	Annual School Executives' Conference	Berkeley U. C.

EDUCATIONAL BROADCASTS

Broadcasts Sponsored by the California State Department of Education

Monday: 9:30 p.m.—Golden Days KRE
Wednesday: 10 p.m.—Pageant of Youth KLX
Wednesday: 1:30 p.m.—Parent Education KFRC
Friday: 8 p.m.—Adventures in Science KLX
Saturday: 3:30 p.m.—Education Today KPO

Alameda School of the Air

Monday: 1:30 p.m.—Great Moments from Literature KLX
Tuesday: 1:30 p.m.—United States History Program KLX
Wednesday: 1:30 p.m.—California History Program KLX
Thursday: 11:15 a.m.—Sonny's Magic Merry-Go-Round KLX
1:30 p.m.—Classic Myths, KLX
Friday: 1:30 p.m.—The Workshop KLX

Broadcasts Sponsored by the United States Office of Education

Wednesday: 6:30 p.m.—Wings for the Martins NBC Blue[1]
Sunday: 1:30 p.m.—The World Is Yours NBC Red[1]

Selected Educational and Entertainment Broadcasts

Sunday
7:30 a.m.—Music and American Youth NBC Red[1]
9:30 a.m.—University of Chicago Round Table NBC Red
10:00 a.m.—Great Plays NBC Blue
10:30 a.m.—Europe Calling CBS
11:00 a.m.—Magic Key NBC Blue
11:00 a.m.—Americans All—Immigrants All CBS
12:00 m.—New York Philharmonic Symphony CBS
1:30 p.m.—The World Is Yours NBC Red
2:00 p.m.—Metropolitan Auditions NBC Blue

[1] NBC Red Network—KPO, KFI, KWG; NBC Blue Network—KGO, KECA, KSFD; CBS—KSFO, KNX; MBS—KFRC, KHJ.

Monday

9:30 a.m.—National Farm and Home Hour NBC Blue
11:30 a.m.—American School of the Air CBS
12:45 p.m.—Between the Bookends NBC Blue
3:00 p.m.—Science in the News NBC Red
4:45 p.m.—Science on the March NBC Blue
6:30 p.m.—National Radio Forum NBC Blue
7:30 p.m.—National Radio Forum NBC Blue
8:30 p.m.—Voice of Firestone NBC Red
10:15 p.m.—White Fires CBS

Tuesday

9:30 a.m.—National Farm and Home Hour NBC Blue
9:45 a.m.—Music Makers NBC Red
11:00 a.m.—Science Everywhere NBC Blue
12:45 p.m.—Between the Bookends NBC Blue
1:45 p.m.—Of Men and Books CBS
9:45 p.m.—University Explorer NBC Blue

Wednesday

9:30 a.m.—National Farm and Home Hour NBC Blue
11:00 a.m.—Your Health NBC Blue
11:30 a.m.—This Living World CBS
12:45 p.m.—Between the Bookends NBC Blue
2:30 p.m.—Nation's School of the Air MBS
3:00 p.m.—Our American Schools NBC Red
4:30 p.m.—Living History CBS
6:30 p.m.—Wings for the Martins NBC Blue

Thursday

9:30 a.m.—National Farm and Home Hour NBC Blue
11:00 a.m.—Standard School Broadcast NBC Blue
12:45 p.m.—Between the Bookends NBC Blue
6:30 p.m.—America's Town Meeting of the Air NBC Blue
7:00 p.m.—Columbia Workshop CBS
7:30 p.m.—Americans at Work CBS
8:15 p.m.—Standard Symphony Hour NBC Red
9:45 p.m.—University Explorer NBC Blue

Friday

9:30 a.m.—National Farm and Home Hour NBC Blue
12:45 p.m.—Commonwealth Club NBC Blue
2:15 p.m.—Men Behind the Stars CBS

Saturday

7:30 a.m.—The Child Grows Up NBC Blue
7:45 a.m.—Florence Hale Radio Column NBC Red
8:00 a.m.—No School Today NBC Red
8:00 a.m.—Cincinnati Conservatory of Music CBS
8:30 a.m.—Eastman School of Music NBC Red
9:30 a.m.—The Wonderful World MBS
9:30 a.m.—National Farm and Home Hour NBC Blue
10:15 a.m.—Metropolitan Opera NBC Red
7:00 p.m.—NBC Symphony Orchestra NBC Blue

PROFESSIONAL LITERATURE

The Implications of Research for the Classroom Teacher. Joint Yearbook of the American Research Association and the Department of Classroom Teachers. Washington: National Education Association, 1939. Pp. 318.

Improvement of educational practice is undoubtedly the ultimate objective of educational research. It is therefore particularly appropriate that the American Educational Research Association, which has never before issued a yearbook, should make its first venture of this type a joint enterprise with the Department of Classroom Teachers aimed directly at this objective. Application of educational research has admittedly fallen short of its possibilities. Among the causes are the tendency for research workers to report for the benefit of their colleagues in research using technical phraseology not well understood by the teaching profession at large, existence of so imposing a mass of research that even specialists have difficulty in keeping informed in their own fields, the fragmentary character and inaccessibility of many studies, the inapplicability of many investigations to the practical school situation, and the unfamiliarity of teachers in general with research methodology.

These and other reasons for the limited influence of research on educational practice are discussed in Part I together with such topics as the value of research to education, the nature of the scientific method, standards for judging research, major types of research, how to locate educational research, and ways and means for making research in education more effective.

Part II is an interpretation and evaluation of the findings of educational research. Sections are devoted to child development, school and class organization, the learning process, visual and auditory aids to learning, guidance, extracurriculum activities, aims of education, and the several subject fields. In each section the material is organized under a series of questions covering important phases of the topic on which research has made significant contributions. Examples to illustrate the types of questions are: "Do children learn more efficiently than young adults?" "Is there a desirable sequence of subjects in the daily schedule?" "At what periods does growth in the various phases of reading occur most rapidly?" "How can learning be managed in controversial matters, especially in the social sciences?"

The treatment in connection with most of the questions consists of a generalized summary of findings, conclusions, and implications based on many pertinent studies, rather than an elaboration of a few selected investigations. The contributors have succeeded well in stating their conclusions in terms of the conditions and limitations of the investigations and in pointing out cases in which evidence of investigations is inconclusive or even conflicting.

Study of the yearbook by teachers will not only familiarize them with the important contributions of educational research, but should increase their understanding and appreciation of the significance of research in the solution of the practical problems of the classroom. The volume will indicate to research workers some of the fields most in need of investigation which has practical application to classroom problems and the importance of reporting their research so that the findings and implications may be more readily applied by teachers.

IVAN R. WATERMAN

CURRENT PUBLICATIONS RECEIVED

Agricultural Education Programs. Suggestions for Further Development of Vocational Education in Agriculture under the National Vocational Education Acts. Monograph No. 19. Office of Education. Washington: United States Department of the Interior, 1938.

"Analysis and Digest of California School Law, Reference Unit No. XIX; Health Supervision and Instruction in the Public Schools," Educational Survey Bulletin No. 8, December, 1938. Los Angeles: Los Angeles County Superintendent of Schools, Division of Administrative Research.

BARR, ARVIL SYLVESTER. *Supervision.* New York: D. Appleton-Century Company, 1938.

COCKING, WALTER D., and GILMORE, CHARLES H. *Organization and Administration of Public Education.* Staff Study No. 2. Prepared for the Advisory Committee on Education. Washington: United States Governmental Printing Office, 1938.

"Directory of County, City, and Supervisors and Directors of Instruction in Los Angeles County." Educational Survey Bulletin No. 27, October, 1938. Los Angeles: Los Angeles County Superintendent of Schools, Division of Administrative Research.

DIXON, CLARICE MADELEINE. *High, Wide, and Deep: Discovering the Preschool Child.* New York: The John Day Company, 1938.

Educational Broadcasting, 1937. Proceedings of the Second Annual Conference on Educational Broadcasting, November 28, 30, December 1, 1937. Chicago: University of Chicago Press, 1938.

Educational Tests and Their Uses. Review of Educational Research, Vol. VIII, No. 5, December, 1938. Washington: American Education Research Association.

HAGGERTY, HELEN RUTH. *Certain Factors in the Professional Education of Women Teachers of Physical Education.* Contributions to Education No. 741. New York: Bureau of Publications, Teachers College, Columbia University, 1938.

HODGKINS, GEORGE WILSON. *A Guide to Newer Methods in Teaching the Social Studies.* Bulletin No. 7, Cambridge, Massachusetts: The National Council for the Social Studies, 1936.

JACOBS, CHARLES LOUIS. *Status of the Junior High School in California.* Santa Barbara: Santa Barbara State College, 1936.

LOGOSH, HANNAH. *The Study Hall in the Junior and Senior High School.* New York: The Macmillan Company, 1938.

MILLER, DAVID FRANKLIN, and BLAYDES, GLENN A. *Methods and Materials for Teaching Biological Sciences.* New York: McGraw-Hill Book Company, 1938.

RICHARDS, IVOR ARMSTRONG. *Interpretation in Teaching.* New York: Harcourt, Brace & Co., 1938.

Safety Education in Industrial School Shops. Bulletin No. 332, Harrisburg, Pennsylvania: Commonwealth of Pennsylvania Department of Public Instruction, 1938.

Schools in Small Communities. Seventeenth Yearbook of the American Association of School Administrators. Washington: National Education Association, 1939.

"Textbooks and Instructional Materials Evaluated by Means of the Lewerenz Vocabulary Grade Placement Formulas, 1938." A report supplementing "Books Evaluated by Means of the Vocabulary Grade Placement Formula." Los Angeles City School District, Revised March, 1937. Education Survey Bulletin No. 25, September, 1938. Los Angeles: Los Angeles County Superintendent of Schools, Division of Administrative Research.

DIRECTORY OF THE
CALIFORNIA STATE DEPARTMENT OF EDUCATION

STATE BOARD OF EDUCATION

	Term Expires
A. Heber Winder, President, 204 Loring Building, Riverside	1940
Armistead B. Carter, Bank of America Building, San Diego	1942
Ford A. Chatters, Lindsay	1941
Dr. Lewis P. Crutcher, 3204 E. Second Street, Long Beach	1940
Miss Alice H. Dougherty, 4508 Pleasant Valley Court, Oakland	1940
R. E. Golway, 3959 H Street, Sacramento	1939
Mrs. Edna Kasch, 417 Oak Park Avenue, Ukiah	1941
Daniel C. Murphy, 90 Justin Drive, San Francisco	1942
Miss Alice Rose Power, 233 Claremont, San Francisco	1939
Mrs. Rae L. Shoemaker, Los Angeles	1943

Walter F. Dexter, Secretary and Executive Officer
Mrs. Florence B. Argall, Assistant Secretary

STAFF

(Unless otherwise indicated all staff members may be reached at Sacramento)

Walter F. Dexter, Superintendent of Public Instruction, Director of Education
- Beryl Cole, Administrative Assistant
- Alfred E. Lentz, Administrative Adviser
- Henry M. Lynn, Departmental Accountant
- Marion K. Wachhold, Assistant Secretary and Principal Clerk, Public School Teachers' Retirement Salary Fund Board

Sam H. Cohn, Deputy Superintendent of Public Instruction

J. A. Burkman, Assistant Director of Education

Walter E. Morgan, Assistant Superintendent of Public Instruction and Chief of Division of Research and Statistics

Irene Taylor Heineman (Mrs.) Assistant Superintendent of Public Instruction, 311 California State Building, Los Angeles

Ivan R. Waterman, Chief of Division of Textbooks and Publications
- W. S. Dyas, Chief of Bureau of State Printed Textbooks

Evelyn A. Clement (Mrs.) Chief of Division of Teacher Training and Certification

J. C. Beswick, Assistant Executive Officer, Commission for Vocational Education and Chief of Bureau of Trade and Industrial Education
- Julian A. McPhee, Chief of Bureau of Agricultural Education; President of California Polytechnic School, San Luis Obispo
- Ira W. Kibby, Chief of Bureau of Business Education
- Maude I. Murchie, Chief of Bureau of Homemaking Education
- H. D. Hicker, Chief of Bureau of Vocational Rehabilitation
  - J. M. Dodd, District Supervisor of Vocational Rehabilitation, 303 State Building, San Francisco
  - W. E. Smith, District Supervisor of Vocational Rehabilitation, 107 California State Building, Los Angeles

George C. Mann, Chief of Division of Adult and Continuation Education, 311 California State Building, Los Angeles
- Gertrude Laws, Chief of Bureau of Parent Education, 311 California State Building, Los Angeles

Helen Heffernan, Chief of Division of Elementary Education
- Gladys L. Potter (Mrs.) Assistant Chief
- Lillian B. Hill (Mrs.), Chief of Bureau of Attendance and Migratory Education

Mabel R. Gillis, State Librarian, Chief of Division of Libraries
- Eleanor Hitt, Assistant Librarian

W. H. Orion, Chief of Division of Physical and Health Education
- Winifred Van Hagen, Chief of Bureau of Physical Education for Girls

Chas. Bursch, Chief of Division of Schoolhouse Planning
- Doyt Early, School Architect

Aubrey A. Douglass, Chief of Division of Secondary Education
- Frank B. Lindsay, Assistant Chief

Commission for Special Education
- H. D. Hicker, Chief of Bureau of Vocational Rehabilitation, Chairman
- R. S. French, Chief of Bureau for the Education of the Blind; Superintendent, California School for the Blind, Berkeley
- Elwood A. Stevenson, Chief of Bureau for the Education of the Deaf; Superintendent, California School for the Deaf, Berkeley
- Mabel F. Gifford (Mrs.), Chief of Bureau of Correction of Speech Defects, 317 State Building, San Francisco

o

69882 3-39 3500